

Appl. No. 10/643,115
Examiner: NGUYEN, DILINH P, Art Unit 2814
In response to the Office Action dated March 24, 2006

Date: May 18, 2006
Attorney Docket No. 10112761

AMENDMENTS TO THE SPECIFICATION

Please substitute the following amended paragraph for the paragraph beginning on page 7, line 25.

As shown in Fig. 3F, the interval layer 349a is removed by etching, for example, wet etching using HF as the main etchant. After removing interval layer 349a, the sidewall over the conductive layer in the trench is exposed. As shown in Fig. 3G, a first silicon oxide layer 351 is formed on the exposed sidewall of the trench (DT) by the thermal process to protect the upper sidewall of the trench, enhancing the isolation between the n-type diffusion region 344 and the buried out diffusion region 362. More particularly, because the first silicon oxide layer [[354a]] 351a is formed on the sacrificial layer and the exposed sidewall of the trench, the top width of the deep trench is not enlarged during subsequent etching process.

Please substitute the following amended paragraph for the paragraph beginning on page 8, line 7.

As shown in Fig. 3H, a second silicon oxide layer 353 is deposited in the trench by CVD, followed by anisotropic etching to remove the second silicon oxide layer 353 over the conductive layer 348. As shown in Fig. 3I, an n-type upper conductive layer [[358]] 354a is deposited in the trench and then etched back to a target depth below the surface of the substrate.